Virginia

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
Sacramento Field Office
3310 El Camino Avenue, Suite 130
Sacramento, California 95821-6340

IN REPLY REFER TO:

1-1-96-F-156

March 11, 1997

David H. Densmore
Division Administrator
U.S. Department of Transportation
Federal Highway Administration
Region Nine, California Division
980 Ninth Street, Suite 400
Sacramento, California 95814-2724

Subject: Formal Programmatic Consultation Permitting Projects with Relatively Small Effects on the Valley Elderberry Longhorn Beetle Within the Jurisdiction of the Sacramento Field Office, California (Administration File #572.9/9821)

Dear Mr. Densmore:

This document is in response to your request for formal consultation pursuant to section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.) (Act), regarding actions that the U.S. Federal Highway Administration (Administration) may take on projects with limited effects on the threatened valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) (beetle) or its habitat. Your September 17, 1996, request for formal consultation was received on September 18, 1996. This consultation addresses the effects of these projects on the federally threatened beetle and its elderberry host-plant (*Sambucus* species). The geographic scope of this consultation is the area within the jurisdiction of the Sacramento Field Office (SFO) of the U.S. Fish and Wildlife Service (Service). This consultation document has been prepared pursuant to 50 CFR §402 of our interagency regulations governing section 7 of the Act.

The purpose of this programmatic document is to expedite State and local Federal-aid transportation improvement project consultations with the Administration, and Federal transportation improvement projects on Federal lands with the Administration's Federal Lands Division Office in Denver, Colorado, having relatively small effects on the beetle. Future projects that meet the conditions specified below, or that the Service determines will have similar effects, may be appended to this programmatic consultation.

This consultation document is based on information provided in biological assessments and biological reports provided to the Service by the Administration and other project applicants and consultants. Information obtained by members of my staff during site visits and at meetings with other agency personnel, applicants, and consultants has also been used. Natural history museums, universities, and the scientific literature have also contributed to knowledge of the beetle and its habitat. This information aided the development of appropriate mitigation measures, which are discussed in the "Mitigation Guidelines for the Valley Elderberry Longhorn Beetle" (Guidelines) (see Appendix).

The Service will re-evaluate this programmatic consultation at least every six (6) months to ensure that its continued application will not result in unacceptable effects on the beetle or its ecosystem. Restricting this

programmatic consultation to projects with relatively small effects will limit the effects of the programmatic process on the beetle and its habitat. Tracking and restricting project effects over time will serve to minimize cumulative effects at local and regional levels.

BIOLOGICAL OPINION

Description of the Proposed Action

This consultation collectively covers projects with small effects on the valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) or its host plant, elderberry (*Sambucus* species), in or along the margins of the Sacramento and San Joaquin valleys (Central Valley) of California (Figure 1). The area mapped roughly follows the 3,000-foot elevation contour on the east and the watershed of the Central Valley on the west. All, or portions, of 31 counties are included: Alameda, Amador, Butte, Calaveras, Colusa, Contra Costa, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Madera, Mariposa, Merced, Napa, Nevada, Placer, Sacramento, San Benito, San Joaquin, San Luis Obispo, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, and Yuba. The Service may treat individual projects from outside this area under this programmatic consultation at its discretion.

All projects implemented under this programmatic consultation will meet the following four criteria, or will be determined by the Service to have effects similar in nature:

1. no designated critical habitat [50 CFR §17.95(i)] will be affected,

2. twenty-five (25) or fewer elderberry plants, each with at least one stem measuring 1.0 inch or greater in diameter at ground level, exist in the action area (action area is defined under 50 CFR §402.02 as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action), *and*

3. between one (1) and two hundred (200) elderberry stems measuring 1.0 inch or greater in diameter at ground level exist in the action area, *and*

4. less than 250 linear feet (76 meters) of undeveloped watercourse exists in the action area, measured down the centerline. An undeveloped watercourse is one without human-made levees, channelization, rip-rap, or other artificial alteration, and may be either permanent or seasonal. This requirement may be waived if no elderberry plants occur in the vicinity of the watercourse(s).

In order to be considered for inclusion under this programmatic document, the biological assessment for the project (50 CFR §402.12), or equivalent document(s) provided to the Service, will include:

1. a description of the project,

2. a vicinity map,

3. a legal location description, and

4. the results of a survey for the beetle and for elderberry plants, performed by a qualified biologist. The survey report will include at least the following information:

   a. a map showing the boundaries of the project site on a U. S. Geological Survey 7.5 minute quadrangle and identifying the county or counties in which the project is to occur;

   b. a map (scale 1" = 100' or 1" = 200') delineating the major vegetation communities present on the site;

   c. the acreage to be affected by the project that:

      i. lies within 50 feet of any elderberry plant,
      ii. lies within riparian habitat of any kind (riparian habitat is defined as any vegetation which typically occurs along water courses, such as riparian forest, riparian woodland, and riparian scrub habitats, as well as degraded or created areas which support, or have the potential to support, plant species characteristic of riparian habitats) and
      iii. lies outside of riparian habitat but within 50 feet of an elderberry plant.

      If the project lies in more than one county, these figures will be provided for each county separately as well as in total;

   d. a map showing the precise location of all elderberry plants on-site, and the precise or estimated location of other elderberry plants that may be affected by the project;

   e. an accounting of the number of elderberry plants present in the action area, and an accounting for each plant that will include the estimated height, number of stems greater than 1.0 inch in diameter at ground level, and presence or absence of exit holes of the beetle;

   f. an assessment of potential habitat for the beetle within 2,000 feet of the site boundary if accessible; if not accessible, an estimate of potential habitat for the beetle and a general description of the unaccessible area(s);

   g. an analysis of the effects of the project on the beetle and its habitat, including cumulative effects as defined under 50 CFR §402.02 as those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation; and,

   h. a similar analysis of effects of the alternate actions considered.

The information provided in the biological assessment will be used by the Service to assess and monitor the local, county-wide, and regional effects of the programmatic consultation on the beetle. Projects that are not consistent with these conditions may be appended to this biological opinion only as the Service deems appropriate. For example, the Service may elect to treat under this programmatic consultation a project that affects 40 elderberry plants, but has effects similar in nature and scope to those analyzed here, and is

implemented in a manner consistent with the process described in this biological opinion. Projects with other listed or proposed species present will undergo individual review, but, upon review by the Service, may have the beetle included as part of this consultation.

The following process will be used when proposed projects are presented for inclusion under this programmatic biological opinion:

1. After reviewing the proposed action, the Administration will forward to the Service's Sacramento Field Office:

   a. a letter requesting that the proposed project be appended to this biological opinion; and

   b. the biological assessment for the project, or equivalent document(s), along with all other pertinent information, including a complete description of the project, the field survey report, and maps, as described above. Any other threatened, endangered, or proposed species that may be affected by the project will be included in the biological assessment.

2. The Service will designate a staff biologist to serve as the contact and lead. The Service will review the proposed project. If the effects of the proposed project do not meet the criteria for inclusion in this programmatic biological opinion, the Service will inform the Administration within 15 days of the date the request for initiation of consultation was received by the Service, and the Service will recommend a separate consultation. Otherwise;

3. The Service will take one of three actions:

   a. If the proposed mitigation is adequate, the Service will deliver to the Administration a letter approving the proposed mitigation and appending the proposed project to this programmatic consultation.

   b. If the proposed mitigation is inadequate, the Service may deliver to the Administration a letter appending the proposed project to this programmatic consultation, provided that additional measures (terms and conditions) specified in the Service's letter are undertaken by the applicant in order to adequately mitigate the effects of the proposed action; or,

   c. if the proposed mitigation is inadequate, the Service may deliver to the Administration a letter instructing the applicant to contact the Service's staff biologist (identified in the letter) for assistance in determining the applicant's mitigation responsibilities.

4. The Administration will forward the above letter to the applicant. If the proposed mitigation has not been approved, the Administration will instruct the applicant to contact the Service's staff biologist for assistance in determining the applicant's mitigation responsibilities.

Appropriate measures have been developed to reduce the impacts of a variety of projects on the beetle. These measures have been implemented and tested in

the form of Guidelines (USFWS 1996), which are revised and re-issued periodically by the Service. Projects that will be authorized under this biological opinion will minimize impacts to the valley elderberry longhorn beetle by following these Guidelines or by otherwise mitigating in a manner acceptable to the Service. These Guidelines are attached (Appendix). These Guidelines are also available from this office as a separate document with examples.

Tracking and Reassessment of the Programmatic Process by the Service

To ensure that incremental losses of habitat do not jeopardize the continued existence of the valley elderberry longhorn beetle in any county, the Service will implement a system to track the effects of this programmatic consultation. Every six (6) months from the date of this biological opinion, the Service will re-evaluate the impacts and effectiveness of the programmatic process.

It is not possible to accurately assess the amount of existing habitat that remains (i.e., the number and location of all elderberry plants within the beetle's range). Therefore, to access the effects of this programmatic consultation, the Service will track, for each county, the total amount of potential beetle habitat (i.e., the number of acres, elderberry shrubs, and stems) that is affected by projects permitted under this biological opinion and the total amount of habitat that is created and restored as a result of mitigation for these effects. Potential habitat acres will be defined as all area within 50 feet of any elderberry plant, or within riparian habitat suitable for the growth of elderberry plants.

Mitigation may be on-site or off-site with Service approval. To the extent practical, and when it contributes to the recovery of the beetle, mitigation will occur in the same general areas as effects. Mitigation may be coordinated with local planning efforts with Service approval. Mitigation responsibilities may also be met by purchasing the appropriate number of acres/plantings in a mitigation bank that meets the compensation requirements (i.e., meets or exceeds the required number of plantings and provides for transplantation of effected elderberry shrubs) identified in the Guidelines. Combinations of the these mitigation options may be used with Service approval.

Because precise information on the existing environmental baseline (number of elderberry plants occurring in the Central Valley and adjacent foothills) cannot be assessed at this time, the amount of incidental take that will be allowed under this programmatic consultation has been determined based on the amount of incidental take that has been permitted in past years. The Service has determined that this amount of take has not jeopardized the continued existence of the valley elderberry longhorn beetle. Based on this information, effects of all projects permitted under this programmatic consultation within a six-month period will be limited to no more than 250 elderberry shrubs with one or more stems measuring 1.0 inch or greater in diameter at ground level or no more than 2,000 stems measuring 1.0 inch or greater in diameter at ground level, whichever number is smaller.

A comprehensive review of the effects and mitigation (i.e., the number and location of acres, shrubs, and stems destroyed and created/restored within each county) will be conducted at the end of each six-month period. As a result of these reviews, it may be determined that: (1) small projects affecting the beetle may continue to be appended to this programmatic consultation for another six-month period with the current mitigation process in place, (2) proposed project effects may need to be limited in specific areas, (3) changes in the mitigation process are needed, or (4) further

impacts in specific areas may jeopardize the beetle or other listed species, and use of this programmatic consultation is not appropriate for these areas. The Service will work closely with recovery efforts to ensure that created and restored areas are distributed across the landscape in such a manner as to allow them to function effectively and contribute to the recovery of the beetle.

Status of the Species

On August 8, 1980, the valley elderberry longhorn beetle was listed as a threatened species (45 FR 52803). Two areas along the American River in the Sacramento metropolitan area have been designated as critical habitat for the beetle. In addition, an area along Putah Creek, Solano County, and the area west of Nimbus Dam along the American River Parkway, Sacramento County, are considered essential habitat, according to the Recovery Plan for the beetle (USFWS 1984). These areas support large numbers of mature elderberry shrubs with extensive evidence of use by the beetle.

The valley elderberry longhorn beetle is dependent on its host plant, elderberry (*Sambucus* species), which is a common component of the remaining riparian forests of the Central Valley. Use of the plants by the animal, a wood borer, is rarely apparent. Frequently, the only exterior evidence of the shrub's use by the beetle is an exit hole created by the larva just prior to the pupal stage. Recent field work along the Cosumnes River and in the Folsom Lake area indicates that larval galleries can be found in elderberry stems with no evidence of exit holes; the larvae either succumb prior to constructing an exit hole or are not far enough along in the developmental process to construct an exit hole. Larvae appear to be distributed in stems which are 1.0 inch or greater in diameter at ground level. The "Valley Elderberry Longhorn Beetle Recovery Plan" (USFWS 1984) and Barr (1991) contain further details on the beetle's life history.

Population densities of the beetle are probably naturally low (USFWS 1984); and it has been suggested, based on the spatial distribution of occupied shrubs (Barr 1991), that the beetle is a poor disperser. Low density and limited dispersal capability may cause the beetle to be vulnerable to the negative effects of the isolation of small subpopulations due to habitat fragmentation.

Environmental Baseline

Extensive destruction of California's Central Valley riparian forests has occurred during the last 150 years due to agricultural and urban development (Katibah 1984, Katibah et al. 1984, Smith 1977, Thompson 1961). Based on a 1979 aerial survey, only about 102,000 acres out of an estimated 922,000 acres of Central Valley riparian forest remain (Katibah et al. 1981). More extreme figures were given by Frayer et al. (1989), who reported that approximately 85 percent of all wetland acreage in the Central Valley was lost before 1939; and that from 1939 to the mid-1980's, the acreage of wetlands dominated by forests and other woody vegetation declined from 65,400 acres to 34,600 acres. Differences in methodology may explain the differences between the studies. In any case, the historical loss of riparian habitat in the Central Valley strongly suggests that the range of the beetle has been reduced and its distribution greatly fragmented. Loss of non-riparian habitat where elderberry occurs (e.g., savanna and grassland adjacent to riparian habitat, oak woodland, mixed chaparral-woodland), and where the beetle has been recorded (Barr 1991), suggests further reduction of the beetle's range and increased fragmentation of its upland habitat.

The beetle's current distribution is patchy throughout the remaining habitat of the Central Valley from Redding to Bakersfield. Surveys conducted in 1991 (Barr 1991) found evidence of beetle activity at 28 percent of the 230 sites with elderberry. The beetle appears to be only locally common, i.e., found in population clusters which are not evenly distributed across available elderberry shrubs. Frequently only particular clumps or trees in the study areas were found to harbor the beetle. Plants used by the beetle usually show evidence of repeated use over a period of several years, but sometimes only one or two exit holes are present. Similar observations on the clustered distribution of exit holes were made by Jones and Stokes (1987). Barr (1991) noted that elderberry shrubs and trees with many exit holes were most often large, mature plants; young stands were seldom occupied.

The action area of this programmatic consultation covers the known range of the beetle, since projects that may be authorized under this biological opinion are likely to exist throughout its range. Therefore, the environmental baseline for the beetle in the action area is equivalent to the rangewide status of the beetle, which is addressed above. To summarize, the Service believes that the valley elderberry longhorn beetle, though wide-ranging, is in long-term decline due to human activities which have resulted in widespread alteration and fragmentation of riparian habitats, and to a lesser extent, upland habitats, which support the beetle.

Effects of the Proposed Action

The proposed action may affect all valley elderberry longhorn beetles inhabiting as many as 250 elderberry plants with at least one stem measuring 1.0 inch or greater in diameter at ground level or as many as 2,000 elderberry stems measuring 1.0 inch or greater in diameter at ground level in or adjacent to the Central Valley within a six-month period. This action will adversely affect the valley elderberry longhorn beetle. Any beetle larvae occupying these plants are likely to be killed when the plants are removed.

To mitigate for these effects, projects permitted under this programmatic consultation would relocate (transplant) elderberry shrubs that have one or more stems measuring 1.0 inch or greater in diameter at ground level and would plant additional elderberry, in the form of seedlings or rooted cuttings, and associated native species in accordance with the Guidelines (Appendix).

Transplantation of elderberry shrubs that are or could be used by beetle larvae is expected to adversely affect the beetle. Beetle larvae may be killed or the beetles' life cycle interrupted during or after the transplanting process. For example:

1. Transplanted elderberry shrubs may experience stress or become unhealthy due to changes in soil, hydrology, microclimate, or associated vegetation. This may reduce their quality as habitat for the beetle, or impair their production of habitat-quality stems in the future.

2. Elderberry shrubs may die as a result of transplantation.

3. Branches containing larvae may be cut, broken, or crushed as a result of the transplantation process.

Elderberry plants which are too small to be likely to support larval beetles (i.e., consist of no stems measuring 1.0 inch or greater in diameter at ground level) may be destroyed without transplantation or compensation. However, were they not destroyed, such small plants could potentially grow larger and produce stems capable of serving as habitat for the beetle.

Temporal loss of habitat will occur. Although mitigation for impacts on the beetle involve creation or restoration of habitat, it generally takes five or more years for elderberry plants to become large enough to support beetles, and it generally takes 25 years or longer for riparian habitats to reach their full value (USFWS 1994). Temporal loss of habitat will temporarily reduce the amount of habitat available to beetles and may cause fragmentation of habitat and isolation of subpopulations.

The construction and operation of proposed projects which may be appended to this programmatic may have indirect effects on the beetle. Effects to the beetle from construction and operation of the projects, in relative proximity to elderberry host plants, may include but are not limited to: fragmentation of habitat, altered hydrology, runoff or leaching or drift of fertilizers or pesticides (including herbicides), trampling by increased pedestrian traffic, disturbance of mating or dispersal by increased artificial lighting, and increased fungal parasitism due to elevated humidity near irrigated areas. Also, accidental grading in areas designated as avoidance areas, or other careless handling of heavy equipment during construction, could destroy or injure elderberry plants used by the beetle.

These Guidelines provided by the Service (Appendix), which will be followed by projects approved under this programmatic consultation, are intended to take into account and offset these adverse effects, in part by incorporating elevated habitat replacement ratios. Departure from these Guidelines may be approved by the Service when appropriate. Elderberry plants will be transplanted whenever possible and habitat will be created or restored for the beetle to offset these adverse effects.

Cumulative Effects

Cumulative effects are those effects of future State, local, or private actions on endangered and threatened species or critical habitat that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

The Service is not aware of specific projects that might affect the beetle or its critical habitat that are currently under review by State, county, and local authorities. Nevertheless, continued human population growth in the Central Valley and other parts of California is expected to drive further development of agriculture, cities, industry, transportation, and water resources in the foreseeable future. Some of these future activities will not be subject to Federal jurisdiction (and thus are considered to enter into cumulative effects), and are likely to result in loss of riparian and other habitats where elderberry plants and the beetle live.

Conclusion

After reviewing the current status of the beetle, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is the Service's biological opinion that the projects to be permitted under this programmatic biological opinion, as proposed, are not likely to jeopardize the continued existence of the threatened valley elderberry longhorn beetle. Although critical habitat has been designated for the beetle, the proposed action would not affect critical habitat.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harass is defined by the Service as an intentional or negligent act or omission which creates the likelihood of injury to a listed species by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. Harm is defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by impairing behavioral patterns including breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with this Incidental Take Statement.

The measures described below are non-discretionary and must be implemented by the Administration so that they become binding conditions of any grant or permit issued to an applicant, as appropriate, in order for the exemption in section 7(o)(2) to apply. The Administration has a continuing duty to regulate the activity covered by this incidental take statement. If the Administration, (1) fails to require applicants to adhere to the terms and conditions of this incidental take statement through enforceable terms that are added to the permit or grant document, and/or (2) fails to retain oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(o)(2) may lapse.

Amount or Extent of Incidental Take

The Service has determined that implementation of the programmatic process authorized by this biological opinion will result in the loss of all beetles inhabiting as many as, but no more than, 250 elderberry plants, each with at least one stem measuring 1.0 inch or greater in diameter at ground level, or 2000 elderberry stems measuring 1.0 inch or greater in diameter at ground level in or adjacent to the Central Valley within a six-month period.

Effect of the Take

In the accompanying biological opinion, the Service has determined that this level of anticipated take is not likely to result in jeopardy to the beetle or destruction or adverse modification of critical habitat.

Reasonable and Prudent Measures

The Service believes the following reasonable and prudent measure is necessary and appropriate to minimize incidental take of thebeetle:

> Minimize the effects of project impacts to the beetle and to elderberry plants (habitat) on all proposed project sites.

Terms and Conditions

To be exempt from the prohibitions of section 9 of the Act, the Administration will ensure implementation of the following term and condition, which

implements the reasonable and prudent measure described above. This term and condition is non-discretionary.

All applicants shall comply with the Guidelines (see Appendix).

The reasonable and prudent measure, with its implementing term and condition, is designed to minimize incidental take that might otherwise result from the proposed action. With implementation of this measure the Service believes that no more than 25 elderberry plants, each with at least one stem measuring 1.0 inch or greater in diameter at ground level, or 200 elderberry stems measuring 1.0 inch or greater in diameter at ground level, which provide habitat for the threatened valley elderberry longhorn beetle, will be incidentally taken as a result of each project appended to this programmatic consultation. And, with implementation of this measure, the Service believes that the programmatic process, as described, will result in the incidental taking of no more than 250 elderberry plants, each with at least one stem measuring 1.0 inch or greater in diameter at ground level, or 2,000 elderberry stems measuring 1.0 inch or greater in diameter at ground level, which provide habitat for the threatened beetle, in and adjacent to the Central Valley within a six-month period. If, during the course of the action, this level of incidental take is exceeded, such incidental take represents new information requiring review of the reasonable and prudent measures provided. The Administration must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the reasonable and prudent measure or the suitability of the proposed project for inclusion under this programmatic consultation.

Reporting Requirements

The Service's Sacramento Field Office is to be notified within three working days of the finding of any dead, sick, or injured valley elderberry longhorn beetles or any unanticipated harm to beetles or elderberry plants associated with projects authorized under this incidental take statement. The Service contact person for this information is the entomologist for the San Joaquin Valley Branch, Endangered Species Division, at (916) 979-2728. Any dead or severely injured beetles found (adults, pupae, or larvae) that are not required for pesticide analysis shall be deposited in the Entomology Department of the California Academy of Sciences. The Academy's contact is the Senior Curator of Coleoptera at (415) 750-7239. All observations of valley elderberry longhorn beetles—live, injured, or dead—or fresh beetle exit holes shall be recorded on California Natural Diversity Data Base (NDDB) field sheets and sent to the California Department of Fish and Game, 1220 S Street, Sacramento, California 95814.

Any other federally listed or proposed species found on or adjacent to the site must be reported within three working days of its finding. The Service contact for this information is the Chief of the Endangered Species Division, at (916) 979-2725.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

The Service recommends that the Administration assist in the recovery of the valley elderberry longhorn beetle by supporting an assessment of where beetle habitat is most needed along riparian corridors within its range (e.g., where gaps in suitable habitat occur along water courses). This information should then be made available to the Service, other agencies, project applicants, and conservation organizations, in an effort to coordinate the needs of both the development and environmental conservation communities. In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats, the Service requests notification of the implementation of this recommendation.

REINITIATION - CLOSING STATEMENT

This concludes formal consultation on the actions outlined in the request. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law) and if (1) the amount or extent of incidental take is exceeded, (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion, (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion, or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

If you have any questions concerning this biological opinion, please contact Deborah Mead of my staff at (916) 979-2732, extension 421.

Sincerely,

Wayne S. White
Field Supervisor

cc: AES, Portland, OR
SFWO, Sacramento, CA (Attn: Wetlands Branch)
CDFG, Environmental Services, Sacramento, CA (Attn: Darlene McGriff)
CDFG, Environmental Services, Rancho Cordova, CA (Attn: David Zezulak)
CDFG, Region 1, Redding, CA (Attn: Environmental Services)
CDFG, Region 4, Fresno, CA (Attn: Environmental Services)
Caltrans, District 2, Redding, CA
Caltrans, District 3, Marysville, CA
Caltrans, District 4, Oakland, CA
Caltrans, District 6, Fresno, CA
Caltrans, District 10, Stockton, CA
California Academy of Sciences, San Francisco, CA (Attn: Thomas Moritz)

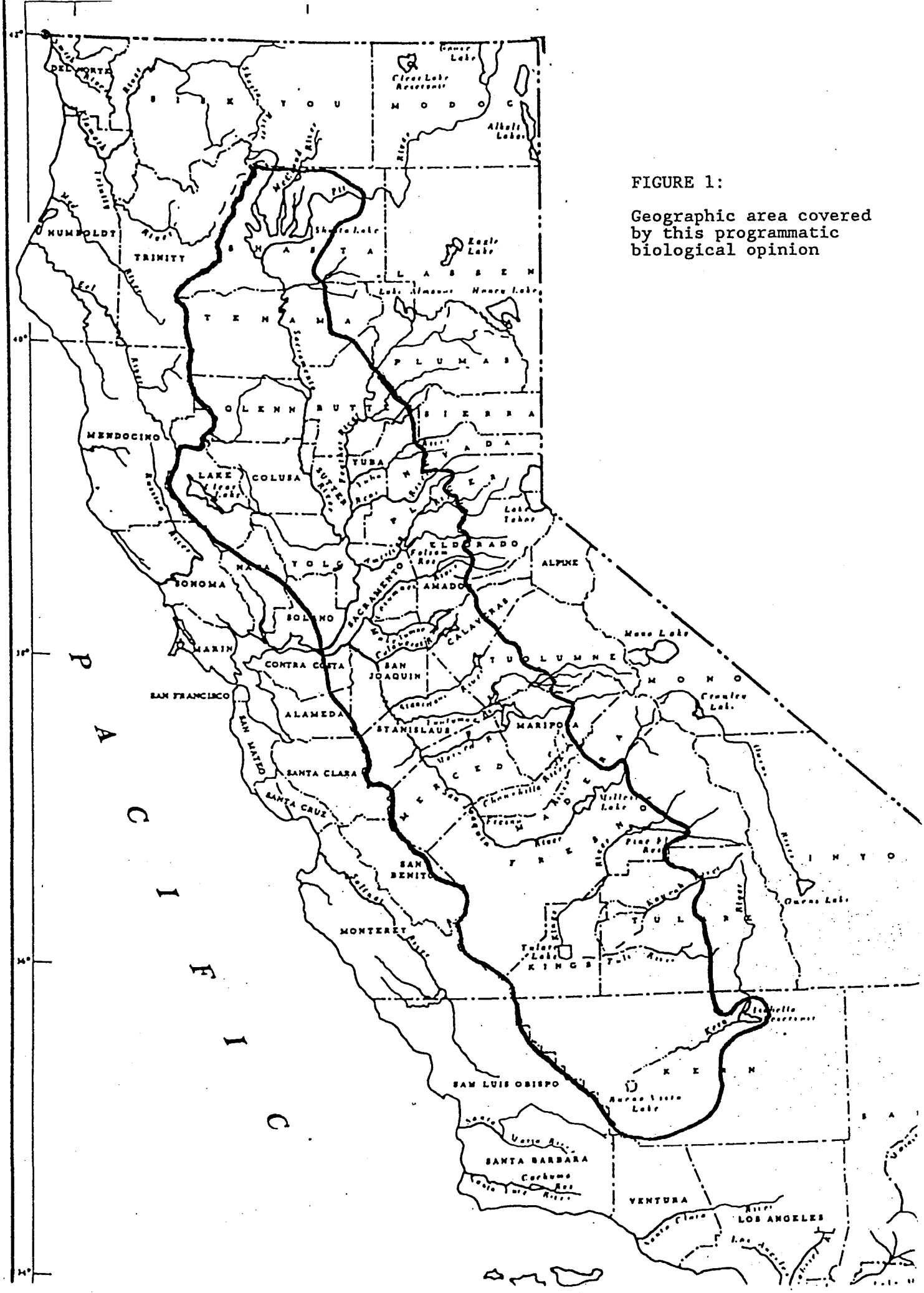

FIGURE 1:

Geographic area covered by this programmatic biological opinion

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APPENDIX

Mitigation Guidelines for the Valley Elderberry Longhorn Beetle

19 September 1996

These mitigation guidelines (Guidelines) are also available from the U. S. Fish and Wildlife Service (Service) as a separate document. The Service will revise these Guidelines as needed. The most recently issued Guidelines should be used in developing all projects and mitigation. Departure from these Guidelines may be approved by the Service when appropriate. To request a copy of these Guidelines, telephone (916) 979-2728 or write to:

U.S. Fish and Wildlife Service
Ecological Services
3310 El Camino Avenue, Suite 130
Sacramento, California 95821-6340

Background information on the valley elderberry longhorn beetle, *Desmocerus californicus dimorphus*, can be found in the **Status of the Species** and **Environmental Baseline** sections of the programmatic formal consultation (Service File No. 1-1-96-F-156) to which this appendix is attached.

Surveys

Proposed project sites within the range of the valley elderberry longhorn beetle (beetle) should be surveyed for the presence of the beetle and its elderberry (*Sambucus* species) host plant by a qualified biologist. The beetle's range extends throughout California's Central Valley and associated foothills from about the 3,000-foot elevation contour on the east and the watershed of the Central Valley on the west. If elderberry plants with one or more stems measuring 1.0 inch or greater in diameter at ground level occur on, or adjacent to, the proposed project site, or are otherwise located where they may be directly or indirectly effected by the proposed action, mitigation is required (see below). Elderberry plants with no stems measuring 1.0 inch or greater in diameter at ground level are unlikely to be habitat for the beetle because of their small size and/or immaturity. Therefore, no mitigation is required for plants with no stems measuring 1.0 inch or greater in diameter at ground level. Surveys are valid for a period of two years.

Avoid and Protect Habitat Whenever Possible

Project sites that do not contain beetle habitat are preferred. If suitable habitat for the beetle occurs on the project site, these areas should be designated as avoidance areas that will be protected from disturbance during the construction and operation of the project. When possible, avoidance areas

should be delineated to connect with adjacent habitat, to prevent fragmentation and isolation of beetle populations. Any beetle habitat that cannot be avoided as described below should be considered impacted and appropriate mitigation should be proposed as described below.

Two Levels of Avoidance: Core and Buffer

Core avoidance area includes all area within 20 feet of the dripline of any elderberry plant with a stem measuring 1.0 inch or greater in diameter at ground level. Core avoidance areas should not be disturbed during or after construction or during operation of the project. Buffer avoidance area includes all area within 100 feet of any elderberry plant with a stem measuring 1.0 inch or greater in diameter at ground level. Firebreaks may not be included in the buffer zone. In buffer areas construction-related disturbance should be minimized, and any damaged area should be promptly restored following construction. The Service should be provided with a map and written details identifying the avoidance area.

Protective Measures

1. Fence and flag all areas to be avoided. Provide a minimum setback of at least 20 feet from the dripline of each elderberry plant.

2. Brief contractors on the need to avoid damaging the elderberry plants and the possible penalties for not complying with these requirements.

3. Put up signs every 50 feet along the edge of the avoidance areas with the following information: "This area is habitat of the valley elderberry longhorn beetle, a threatened species, and must not be disturbed. This species is protected by the Endangered Species Act of 1973, as amended. Violators are subject to prosecution, fines, and imprisonment." The signs should be clearly readable from a distance of 20 feet, and must be maintained for the duration of construction.

4. Instruct work crews about the status of the beetle and the need to protect its elderberry host plant.

Restoration and Maintenance

1. Restore any damage done to the buffer area during construction. Provide erosion control and re-vegetate with appropriate native plants.

2. Both core and buffer avoidance areas should continue to be protected after construction from adverse effects of the project. Measures such as fencing, signs, weeding, and trash removal are usually appropriate.

3. No insecticides, herbicides, fertilizers, or other chemicals that might harm the beetle or it host plant should be used in the core and buffer avoidance areas, or within 100 feet of any elderberry plant with a stem measuring 1.0 inch or greater in diameter at ground level.

4. The applicant should provide a written description of how the core and buffer avoidance areas are to be restored, protected, and maintained after construction is completed.

Transplant Elderberry Plants That Cannot Be Avoided

Elderberry plants should be transplanted if they can not be avoided by the proposed project. All elderberry plants with one or more stems measuring 1.0 inch or greater in diameter at ground level should be transplanted to a mitigation area (see below). At the Service's discretion, a plant that is unlikely to survive transplantation because of poor condition or location, or a plant that would be extremely difficult to move because of access problems, may be exempted from transplantation.

1. Monitor. A qualified biologist (monitor) should be on-site for the duration of the transplanting of the elderberry shrubs, to insure that no unauthorized take of the valley elderberry longhorn beetle occurs. If unauthorized take occurs, the monitor should have the authority to stop work until corrective measures have been completed. The monitor shall immediately report any unauthorized take of the beetle or its habitat to the Service and to the California Department of Fish and Game.

2. Timing. Transplant elderberry shrubs when the plants are dormant, approximately November through the first two weeks in February, after they have lost their leaves. Transplanting during the non-growing season will reduce shock to the plant and increase transplantation success.

3. Transplanting Procedure.

   a. Cut the shrub back 3 to 6 feet from the ground or to 50 percent of its height (whichever is taller) by removing branches and stems above this height. The trunk and all stems measuring 1.0 inch or greater in diameter at ground level should be replanted. Any leaves remaining on the shrub should be removed.

   b. Excavate a hole of adequate size to receive the transplant.

   c. Excavate the plant using a Vemeer spade, backhoe, front end loader, or other suitable equipment, taking as much of the root ball as possible, and replant immediately at the mitigation site. Move the plant only by the root ball. If the plant is to be moved and transplanted off site, secure the root ball with wire and wrap it with burlap. Dampen the burlap with water, as necessary, to keep the root ball wet. Care should be taken to ensure that the soil is not dislodged from around the roots of the transplant.

   d. The planting area shall be at least 1,800 square feet for each elderberry transplant. As many as five (5) additional elderberry plantings (cuttings or seedlings) and up to five (5) associated native species plantings (see below) may also be planted within the 1,800 square foot area with the transplant. The root ball should be planted so that its top is level with the existing ground. Compact the soil sufficiently so that settlement does not occur. The transplant and each new planting should have its own watering

basin measuring at least three (3) feet in diameter. Watering basins should have a continuous berm measuring approximately eight (8) inches wide at the base and six (6) inches high. If the site receiving the transplant does not have adequate soil moisture, it may be necessary to pre-wet the site soil a day or two before transplantation.

e. Saturate the soil with water. Do not use fertilizers or other supplements or paint the tips of stems with pruning substances, as the effects of these compounds on the beetle are unknown.

f. Monitor to ascertain if additional watering is necessary. If the soil is sandy, well-drained soil plants may need to be watered weekly or twice monthly. If the soil is clayey, poorly-drained soil it may not be necessary to water after the initial saturation. A drip watering system and timer is ideal. However, in situations where this is not possible, a water truck or other apparatus may be used.

Plant Additional Seedlings or Cuttings

Each elderberry stem measuring 1.0 inch or greater in diameter at ground level that is adversely effected (i.e., transplanted or destroyed) will be replaced, in the mitigation area, with elderberry seedlings or cuttings at a ratio ranging from 2:1 to 5:1 (new plantings to affected stems). Stock of either seedlings or cuttings should be obtained from local sources. Cuttings may be obtained from the shrubs to be transplanted if the project site is in the vicinity of the mitigation site. The replacement ratio is determined as follows:

1. Elderberry plants with no beetle exit holes: Ratio of 2:1
2. Elderberry plants with beetle holes in 50 percent or fewer of the plants: Ratio of 3:1
3. Elderberry plants with beetle holes in more than 50 percent of the plants: Ratio of 5:1

If the Service determines that the elderberry plants on the proposed project site are unsuitable candidates for transplanting, the Service may allow the applicant to plant seedlings or cuttings at twice the stated ratios for each elderberry plant that cannot be transplanted.

Plant Associated Native Species

Studies have found that the beetle is more abundant in dense native plant communities with a mature overstory and a mixed understory. Therefore, a mix of native plants associated with the elderberry shrubs at the project site or similar sites will be planted at a ratio of at least one (1) specimen of native tree or shrub species for every elderberry plant (seedling or cutting). These native plantings must be monitored with the same survival criteria used for the elderberry seedlings (see below). Stock of saplings, cuttings, and seedlings should be obtained from local sources. If the parent stock is from more than one mile from the mitigation site, approval by the Service of the native plant donor sites will be obtained prior to initiation of the revegetation work. Planting or seeding the mitigation

area with native herbaceous species is encouraged. Establishing native grasses and herbs may discourage unwanted non-native species from becoming established or persisting at the mitigation site. Only stock from local sources should be used.

Mitigation Area—Provide Habitat for the Beetle in Perpetuity

The mitigation area is distinct from the avoidance area (though the two may adjoin), and serves to receive and protect the transplanted elderberry shrubs and the elderberry and other native plantings. The Service may accept proposals for off-site mitigation areas where appropriate.

1. Size. The mitigation area should provide at least 1,800 square feet for each transplanted elderberry shrub. As many as five (5) elderberry cuttings or seedlings and up to five (5) associated natives may be planted within the 1,800 square foot area with each transplanted elderberry. An additional 1,800 square feet shall be provided for every additional five (5) elderberry cuttings or seedlings and five (5) associated natives planted. Each planting should have its own watering basin measuring approximately three (3) feet in diameter. Watering basins should be constructed with a continuous berm measuring approximately eight (8) inches wide at the base and six (6) inches high.

   The planting density specified above is primarily for riparian forest habitats or other habitats with naturally dense cover. If the mitigation site is an open habitat (i.e., elderberry savanna, oak woodland) more area may be needed for the required plantings. Contact the Service for assistance if the above planting recommendations are not appropriate for the proposed mitigation site.

   No area to be maintained as a firebreak may be counted as mitigation area. Like the avoidance area, the mitigation area should connect with adjacent habitat wherever possible, to prevent isolation of beetle populations.

2. Long-Term Protection. The mitigation area should be protected in perpetuity as habitat for the valley elderberry longhorn beetle. Fee title, a conservation easement or similar agreement, or deed restrictions to protect the mitigation area should be arranged. Mitigation areas should be transferred to a resource agency or appropriate private organization for long-term management. The Service should be provided with a map and written details identifying the mitigation area; and the applicant should receive approval from the Service that the mitigation area is acceptable prior to initiating the mitigation program. A copy of the deed transfer, conservation easement, or deed restrictions protecting the mitigation area in perpetuity should be provided to the Service before, or concurrent with, the submission of the final monitoring report (see below).

3. Weed Control. Weeds and other plants that are not native to the mitigation area should be removed at least once a year, or at the discretion of the Service and the California Department of Fish and Game. Mechanical means should be used; herbicides are prohibited.

4. Pesticide and Toxicant Control. Measures should be taken to insure that no pesticides, herbicides, fertilizers, or other chemical agents enter the mitigation area. No spraying of these agents should be done within one 100 feet of the area, or if they have the potential to drift, flow, or be washed into the area in the opinion of biologists or law enforcement personnel from the Service or the California Department of Fish and Game.

5. Litter Control. No dumping of trash or other material should occur within the mitigation area. Any trash or other foreign material shall be removed within 10 working days of discovery.

6. Fencing. Permanent fencing should be placed completely around the mitigation area to prevent unauthorized entry by off-road vehicles, equestrians, and other parties that might damage or destroy the habitat of the beetle. The applicant should receive written approval from the Service that the fencing is acceptable prior to initiation of the mitigation program. The fence will be maintained in perpetuity, and will be repaired within 10 working days if it is found to be damaged. Some mitigation areas may be made available to the public for appropriate recreational and educational opportunities with written approval from the Service. In these cases appropriate fencing and signs informing the public of the beetle's threatened status and its natural history and ecology should be used and maintained in perpetuity. Some mitigation areas may not benefit, or may be harmed, if fenced or permanent fencing may be unnecessary. In such cases the Service may waive or defer the fencing requirement.

7. Signs. A minimum of two prominent signs should be placed and maintained in perpetuity at the mitigation area, noting that the site is habitat of the federally threatened valley elderberry longhorn beetle and, if appropriate, including information on the beetle's natural history and ecology. The signs should be approved by the Service. They should be repaired or replaced within 10 working days if they are found to be damaged or destroyed.

8. Funding and Management. Adequate funds should be provided to ensure that the mitigation area is managed in perpetuity. The applicant should dedicate an endowment fund for this purpose, and designate the party or entity that will be responsible for long-term management of the mitigation area. The Service should be provided with written documentation that funding and management of the mitigation area (items 3-8 above) will be provided in perpetuity.

Monitoring

The population of valley elderberry longhorn beetles, the general condition of the mitigation area, and the condition of the elderberry and associated native plantings in the mitigation area should be monitored over a period of either ten (10) consecutive years or for seven (7) years over a 15-year period. The applicant may elect either 10 years of monitoring, with surveys and reports every year; or 15 years of monitoring, with surveys and reports on years 1, 2, 3, 5, 7, 10, and 15. The mitigation plan provided by the applicant should state which monitoring schedule will be followed. No change in monitoring schedule will be accepted after the project is initiated.

Surveys. In any survey year, a minimum of two site visits between February 14 and June 30 of each year should be made by a qualified biologist. Surveys will include:

1. A population census of the adult beetles, including the number of beetles observed, their condition, behavior, and their precise locations. Visual counts shall be used; mark-recapture or other methods involving handling or harassment shall not be used.

2. A census of beetle exit holes in elderberry stems, noting their precise locations and estimated ages.

3. An evaluation of the elderberry shrubs and associated native plants on the site, and on the mitigation area, if disjunct, including the number of plants, their size and condition.

4. An evaluation of the adequacy of the fencing, signs, and weed control efforts in the avoidance and mitigation areas.

5. A general assessment of the habitat, including any real or potential threats to the beetle and its host plants, such as erosion, fire, excessive grazing, off-road vehicle use, vandalism, excessive weed growth, etc.

The materials and methods to be used in the monitoring studies should be reviewed and approved by the Service. All appropriate Federal and State permits should be obtained prior to initiating the field studies.

Reports. A written report, presenting and analyzing the data from the project monitoring, will be prepared by a qualified biologist in each of the years in which a monitoring survey is required. Copies of the report will be submitted by December 31 of the same year to the Service (Chief of the Endangered Species Division, Sacramento Field Office), and the Department of Fish and Game (Supervisor, Environmental Services, Department of Fish and Game, 1416 Ninth Street, Sacramento, California 95814; and Staff Zoologist, California Natural Diversity Data Base, Department of Fish and Game, 1220 S Street, Sacramento, California 95814). The report will explicitly address the status and progress of the transplanted and planted elderberry and associated native shrubs and trees, as well as any failings of the mitigation plan and the steps taken to correct them. Any observations of beetles or fresh exit holes will be noted. Copies of original field notes, raw data, and photographs of the mitigation site will be included with the report. A vicinity map of the site and maps showing where the individual adult beetles and exit holes were observed should be included. For the elderberry and associated native plants, the survival rate, condition, and size of the plants should be analyzed. Real and likely future threats should be addressed along with suggested remedies (e.g. limiting public access, more frequent removal of invasive non-native vegetation, etc.).

A copy of each monitoring report, along with the original field notes, photographs, correspondence, and all other pertinent material, should be deposited at the California Academy of Sciences (Librarian, California Academy of Sciences, Golden Gate Park, San Francisco, CA 94118) by December 31 of the year that monitoring is done and the report is prepared. The Service's

Sacramento Field Office should be provided with a copy of the receipt from the Academy library acknowledging receipt of the material, or the library catalog number assigned to it.

Access. Biologists and law enforcement personnel from the California Department of Fish and Game and the Service should be given complete access to the project site to monitor transplanting activities. Personnel from both these agencies should be given complete access to the project and the mitigation area to monitor the valley elderberry longhorn beetle and its elderberry shrub habitat in perpetuity.

Success Criteria

A minimum survival rate of at least 60 percent of the elderberry and associated native plants should be maintained throughout the monitoring period. Within one year of discovery that survival has dropped below 60 percent, the applicant will replace failed plantings to bring survival above this level. The Service will make any determination as to the applicant's replacement responsibilities arising from circumstances beyond its control, such as plants damaged or killed as a result of severe flooding or vandalism.